

**Notice of Allowability**

Application No.

10/657,522

Applicant(s)

SILVER ET AL.

Examiner

Art Unit

DANIEL G. MARIAM

2621

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to a telephone interview dated 6/8/05.
2. ☒ The allowed claim(s) is/are 121-154 (which are now renumbered as 122-155).
3. ☒ The drawings filed on 08 September 2003 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☐ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  6. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08),  
Paper No./Mail Date 11/12/2003
4. ☐ Examiner's Comment Regarding Requirement for Deposit  
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☒ Interview Summary (PTO-413),  
Paper No./Mail Date 6/8/2005.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_

  
**DANIEL MIRIAM**  
**PRIMARY EXAMINER**

### EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Arthur J. O'Dea (Reg. No. 42,952) on June 8, 2005.

2. The application has been amended as follows:

Amend the specification as follows:

In page 2 of the amended to the specification dated September 8, 2003, under the heading "Cross Reference to Related Application": in line 2 after " 12/22/2000" insert "which is now US Patent No. 6,658,145 issued December 2, 2003" - -

under the heading "Cross Reference to Related Application" in line 3 after "12/31/1997" insert "which is now abandoned" - -

under the heading "Cross Reference to Related Application" in lines 3-4 delete "09/979,588" filed 11/26/1997" and replace it with "08/979,588 filed 11/26/1997, which is now abandoned" - -

3. Please Note: While applicants have canceled claims 1-120 of the originally filed claims by the amendment (See page 3 of the preliminary amendment filed September 8, 2003), and have submitted newly added claims 121-154 (See pages 3-6 of the preliminary amendment), the originally filed claims in fact contain claims 1-121.

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Cancel the originally filed claim 121, and renumber the newly added claims **121-154 as 122-155, after the following amendments to the newly added claims have been entered.**

Amend the newly added claim 121 as follows:

At line 4, delete the limitation “adapted” and replace it with “configured” - -

At line 8, delete the limitation “adapted” and replace it with “configured” - -

Amend the newly added claim 122 as follows:

At line 2, delete the limitation “adapted” and replace it with “configured” - -

Amend the newly added claim 123 as follows:

At line 2, delete the limitation “adapted” and replace it with “configured” - -

Amend the newly added claim 125 as follows:

At line 2, delete the limitation “adapted” and replace it with “configured” - -

Amend the newly added claim 126 as follows:

At line 2, delete the limitation “adapted” and replace it with “configured” - -

Amend the newly added claim 136 as follows:

At line 2, delete the limitation “adapted” and replace it with “configured” - -

Amend the newly added claim 137 as follows:

At line 2, delete the limitation “adapted” and replace it with “configured” - -

***Allowable Subject Matter***

4. Claims 122-155 are allowed. The claims will be renumbered as 1-34.
5. The following is an examiner’s statement of reasons for allowance: the instant invention uses a geometric pattern matching for refining the pose of an object in a run-time image, the object having an expected shape and a true pose. Upon acquisition of a training image, a starting

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pose, that represents an initial estimate of the true pose of the object in the training image, and a run-time image, the instant invention detects in the run-time image a plurality of image boundary points using a stored model pattern obtained from the training image, the starting pose, and the run-time image. After detecting the image boundary points, the instant invention then provides: a refine pose, representing a refined estimate of the true pose of the object in the run-time image, an error value, an aggregate clutter and coverage values by using the stored model pattern, the starting pose, and the plurality of image boundary points. These features in combination with all of the other elements of the claims are not disclosed or fairly suggested by none of the prior art of record.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### ***Conclusion***

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to DANIEL G. MARIAM whose telephone number is 571-272-7394. The examiner can normally be reached on M-F (7:00-4:30) FIRST FRIDAY OFF.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, BHAVESH M. MEHTA can be reached on 571-272-7453. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



**DANIEL MIRIAM**  
**PRIMARY EXAMINER**

June 9, 2005